

# National Ambient Air Quality Standards (NAAQS) Update

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U.S. Environmental Protection Agency Region 4

April 26, 2011

# Outline

1. Lead monitoring
2. Sulfur dioxide monitoring
3. Summary information for all criteria pollutants

# Lead Monitoring

# Revised Lead Monitoring Requirements

- Final rule published December 27, 2010
- Lead monitoring required:
  - At sources emitting 0.50 tons per year (tpy) or more of Pb based on National Emissions Inventory (NEI) or other justifiable data
    - *Monitors must be operational by December 27, 2011*
  - At NCore sites in core based statistical areas with populations 500,000 or greater
    - *Monitors must be operational by December 27, 2011*
    - *Agencies can monitor for Pb-TSP or Pb-PM<sub>10</sub>*
  - One year monitoring study at 15 airports nationwide
    - *Continued monitoring requirements retained at airports emitting 1.0 tpy or more*

# Required Source-Oriented Monitoring

- Preliminary list of sources sent to state and local agencies February 25, 2011
  - 2008 NEI version 1 sources (52)
  - 2009 Toxic Release Inventory (TRI) sources (13)
  - **EPA Region 4 Total: 65**



# Sources over 0.50 tons per year

## List of Required Sources from EPA Region 4

New or revised emissions data and EPA concurs

**Monitor not required**

**Monitor Required**  
by December 27, 2011

EPA grants waiver of monitoring requirement based on modeling or historical monitoring  
**Monitor Not Required**

# Source-Oriented Monitoring: New or Revised Emissions Data

- If actual Pb emissions are below 0.50 tpy, monitoring is not required
- Must include documentation and data demonstrating why the emissions changed
  - Revised emissions calculations
  - Documentation from facility of installation of pollution controls
  - Any other documents / data to explain change in emissions

# Source-Oriented Monitoring Waivers

[40 C.F.R 58, Appendix D, Section 4.5(a)(ii)]

- EPA can grant waivers of required source-oriented monitors if state or local can demonstrate that:
  - Maximum Pb concentration will not exceed 50% of the NAAQS ( $0.075 \mu\text{g}/\text{m}^3$ )
  - Based on:
    - Historical monitoring data
    - Modeling
    - Other means
- EPA Region 4 sent waiver modeling guidelines to state and local monitoring and modeling contacts on April 25, 2011





# Pb Monitoring Waivers for Electric Utilities

- Almost half (27 out of 65) of 2008 NEI sources over 0.50 tpy in Region 4 are electric utilities
- Emissions from these facilities are being recalculated by OAQPS using Utility MACT ICR data
  - Will be sent to state/local agencies
- Screening modeling can be used for sources that are above 0.50 tpy
  - See Pb modeling guidelines from EPA Region 4



# National Pb Analysis Contract

- EPA contract with Research Triangle Institute (RTI)
- Analysis of Pb-TSP and Pb-PM<sub>10</sub> filters using FRM/FEM specifications.
  - Pb-TSP method: Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
  - Pb-PM<sub>10</sub> method: X-ray Fluorescence (XRF)
- State and local agencies responsible for filters, AQS data reporting, and shipping
- Analysis results will be reported to SLT agencies within 30 days of receipt of samples
- Analysis cost (9/21/2010 – 9/20/2011):

Pb-TSP (ICP-MS)		Pb-PM <sub>10</sub> (XRF)	
First 25 samples	Over 25 samples	First 25 samples	Over 25 samples
\$85.25	\$66.78	\$30.64	\$23.76

# Lead Monitoring Quality Assurance

- Revised monitoring Quality Assurance Project Plans may be needed for Pb monitoring
  - Agencies that are not currently operating Pb monitors but will be required to start
  - Agencies that will be incorporating a new method into their network (e.g. Pb-PM<sub>10</sub> at NCore)
- Submit to EPA Region 4 by October 1, 2011
- Must be approved before monitoring begins December 27, 2011.

# Sulfur Dioxide Monitoring

# Revisions to the Sulfur Dioxide (SO<sub>2</sub>) NAAQS, Monitoring Network and Data Reporting Requirements

- Finalized June 22, 2010
- New 1-hour standard of 75 parts per billion (ppb)
- 3-year average of 99<sup>th</sup> percentile of annual distribution of daily maximum 1-hour average concentrations
- Hybrid monitoring and modeling approach
  - More technically appropriate and efficient to model medium to larger sources and rely on monitoring for groups of smaller sources and sources not as conducive to modeling
- 1-hour and maximum 5-minute block averages



# SO<sub>2</sub> Network Implementation Considerations

- New minimum monitoring requirements:
  - 163 SO<sub>2</sub> sites nationwide; 48 in Region 4
  - Regional Administrators have authority to require additional monitoring in certain circumstances
- Flexible network design
  - Do not need to focus solely at locations of max concentration
  - Satisfy minimum monitoring requirements with one of following objectives:
    - source-oriented
    - max concentration
    - population exposure
    - background
    - regional transport
    - NCore SO<sub>2</sub> monitor considered acceptable

# Network Implementation Considerations

- Monitoring in CBSAs based on PWEI value
  - 3 monitors in CBSAs with index value of 1,000,000 or more
  - 2 monitors in CBSAs with index value <1,000,000 and >100,000
  - 1 monitor in CBSAs with index value >5,000
- Monitors must be operational by January 1, 2013
  - Annual 2011 network plan needs to reflect state intentions for required SO<sub>2</sub> monitors (based on current estimates)
- Special purpose monitors do not count towards meeting minimum monitoring requirements

# Projected SO<sub>2</sub> Monitoring Requirements by State

State	Required Monitors <sup>1</sup>	Existing Monitors <sup>2</sup>	Total Monitors Needed <sup>2</sup>
Alabama	5	1	4
Florida	12	17	5
Georgia	6	5	2
Kentucky	7	7	1
Mississippi	3	1	2
North Carolina	8	5	3
South Carolina	5	2	3
Tennessee	5	5	1

1) Some states may include a monitor shared by a state in another CBSA.

2) Minimum requirements apply to a CBSA. While more monitors may be in a state than required, they may not meet minimum requirements per CBSA.

NOTE: Final monitoring networks will be developed by state and local agencies in consultation with EPA. Estimates above were calculated using a variety of data sources, including 2008 population estimates, the 2005 NEI, and air quality data from AQS.



# SO<sub>2</sub> Designation and Modeling Guidance

- Signed on March 25, 2011; available electronically on EPA website
- Hybrid analytic approach
- Use 2008-2010 monitoring data; EPA also to consider 2011 data if available
  - States not expected to submit modeling for June 2011 designation recommendations
- Allowable vs. actual emissions
  - Dispersion modeling should be based on maximum allowable emissions or federally enforceable limits

# Summary Information for All NAAQS Pollutants

# Annual Monitoring Network Plans

[40 CFR §58.10]

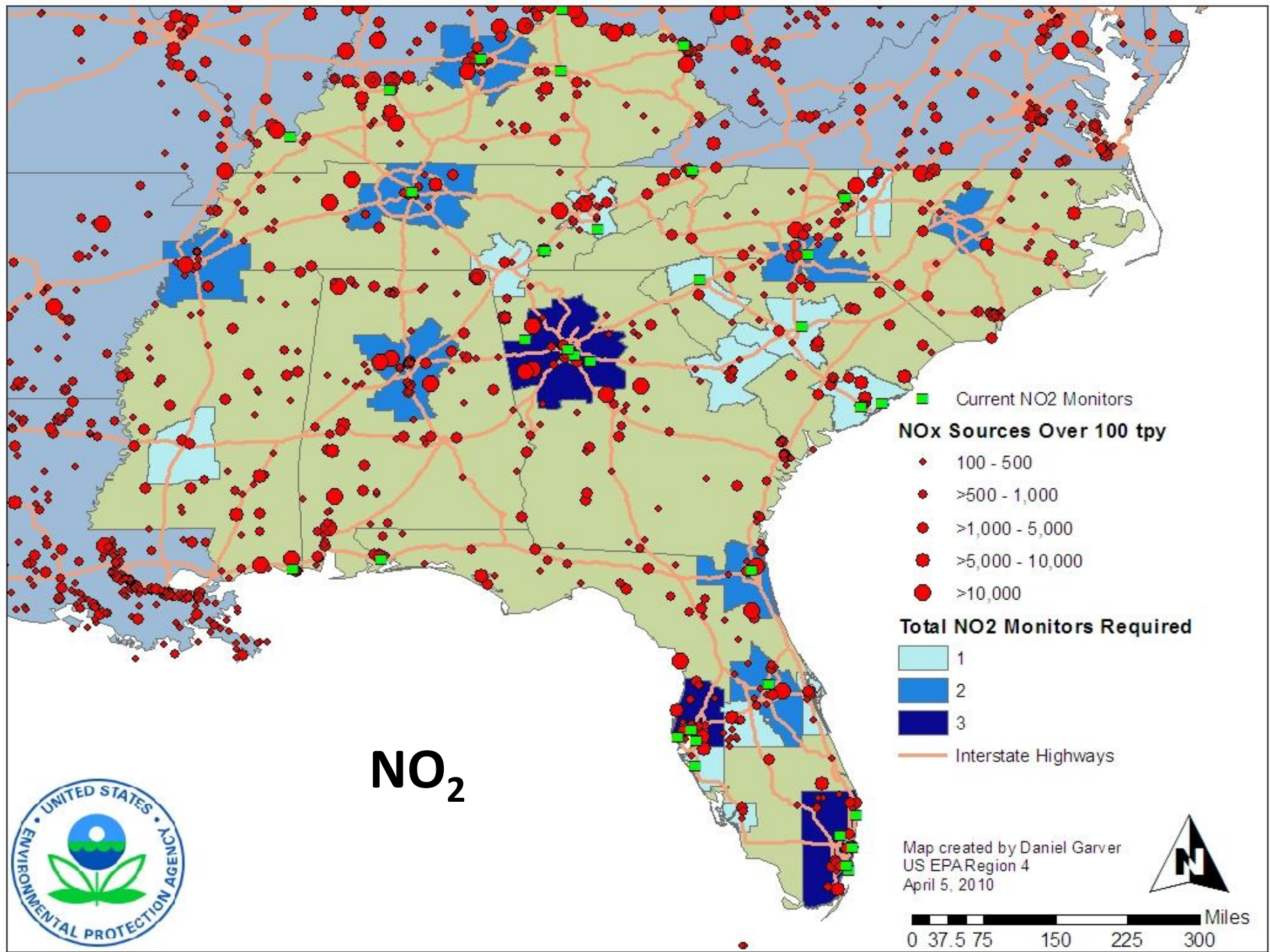
- Due July 1, 2011
- Lead Information to be included:
  1. Site information for newly required source-oriented and urban NCore monitors
  2. Source-oriented monitoring waiver requests for sources above 0.50 tpy
  3. Calculations and/or supporting documentation for sources with new or revised emissions below 0.50 tpy
- Site information for newly required SO<sub>2</sub> monitors

# Projected New or Relocated Monitors

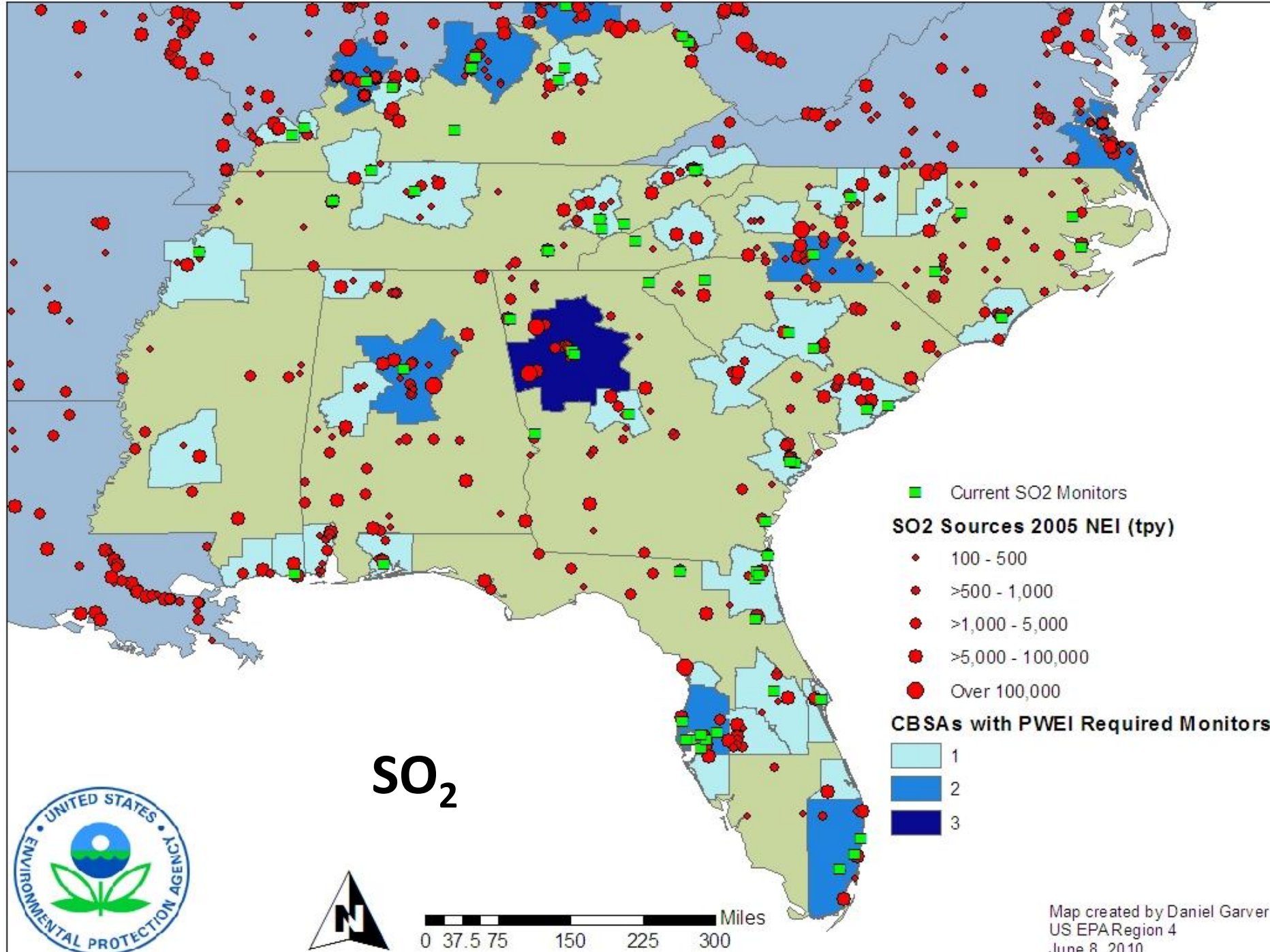
State	O <sub>3</sub>	NO <sub>2</sub>	CO	SO <sub>2</sub>	Pb		Total
					NCore	Source-oriented <sup>1</sup>	
Alabama	5	2	1	4	1	TBD	13
Florida	6	14	6	5	2	TBD	33
Georgia	9	4	2	2	1	TBD	18
Kentucky	3	2	1	1	1	TBD	8
Mississippi	4	1	0	2	1	TBD	8
North Carolina	6	5	2	3	2	TBD	18
South Carolina	5	4	0	1	1	TBD	11
Tennessee	6	6	2	1	1	TBD	16
<b>Total</b>	<b>44</b>	<b>38</b>	<b>14</b>	<b>19</b>	<b>10</b>	<b>TBD</b>	<b>125</b>

1. Source-oriented Pb network designs will be developed by states and locals in consultation with EPA. Data from 2005 and 2008 NEI and 2005 TRI indicate 62 sources over 0.50 tpy in Region 4.

These estimates were calculated using a variety of data sources, including 2009 population estimates, the 2005 and 2008 NEI, and air quality monitoring data from AQS. Final network requirements will be developed in consultation with states and locals in the annual monitoring network plans.





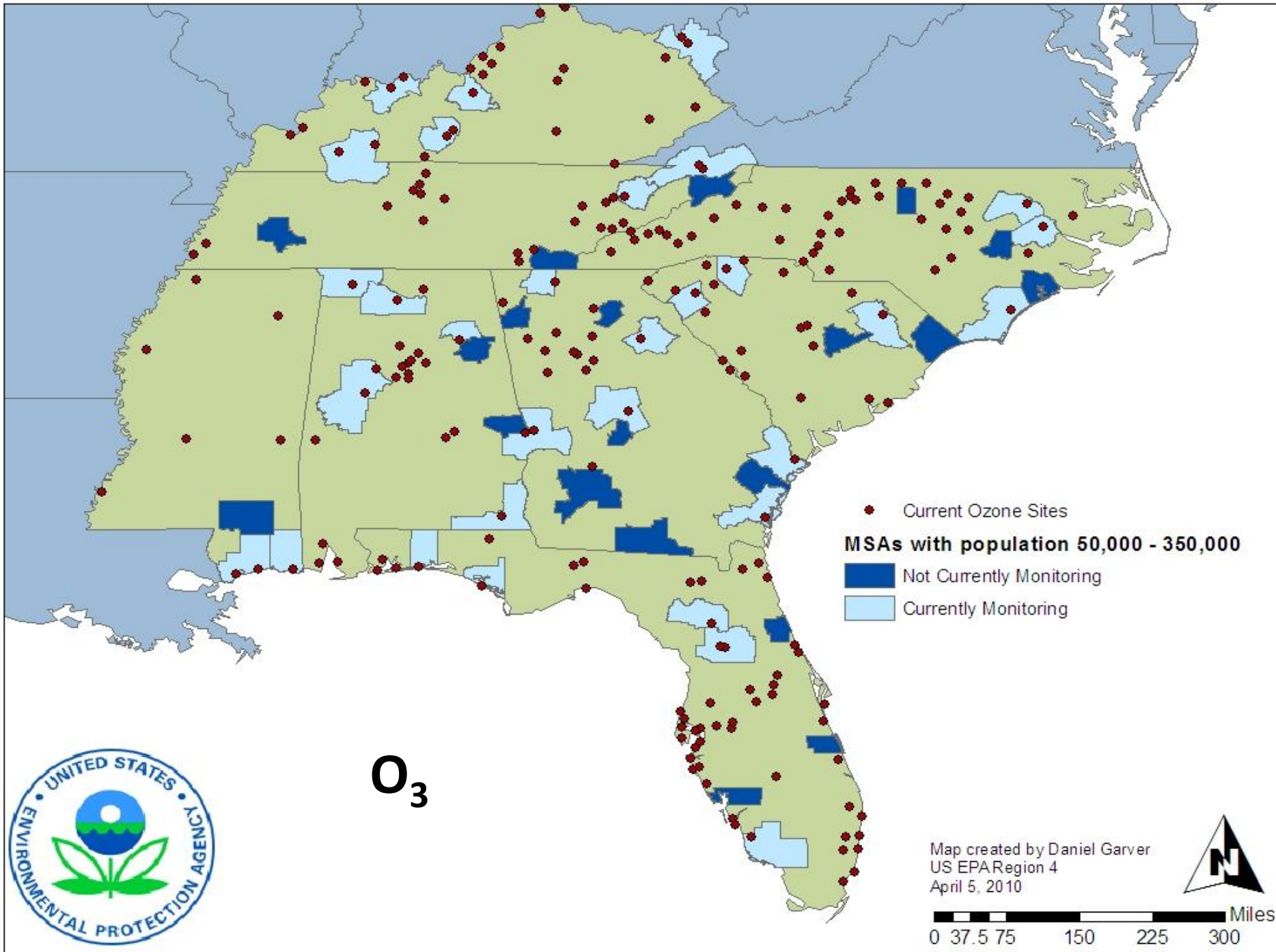


SO<sub>2</sub>

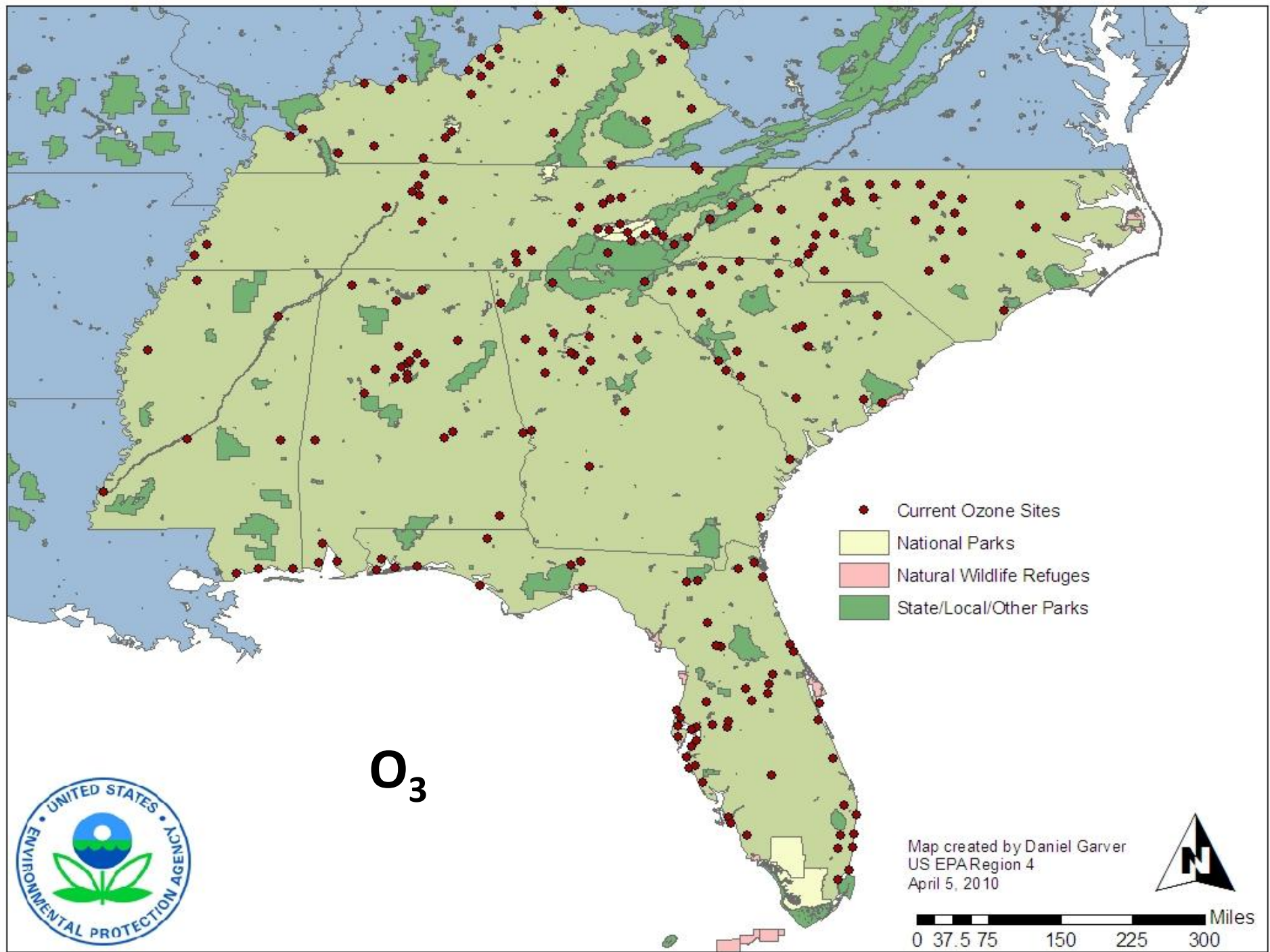


0 37.5 75 150 225 300 Miles

Map created by Daniel Garver  
US EPA Region 4  
June 8, 2010









# Additional Resources

- Lead monitoring information and NAAQS Q&A documents: <http://www.epa.gov/ttn/amtic/pb-monitoring.html>
- Regulatory actions related to the Lead NAAQS including text of the final revised monitoring rule: <http://epa.gov/air/lead/actions.html>
- 2008 NEI Data Access: <http://www.epa.gov/ttnchie1/net/2008inventory.html>
- SO<sub>2</sub> modeling guidance: <http://www.epa.gov/air/sulfurdioxide/guidance.html>

# EPA Region 4 Contacts

## State Contacts

- Alabama: Lloyd Generette
- Florida: Daniel Garver
- Georgia: Darren Palmer
- Kentucky: Keith Goff
- Mississippi: Phyllis Warrilow
- North Carolina: Katie Sciera
- South Carolina: David McNeal
- Tennessee: Stacy Harder

## Pollutant Contacts

- CO: Darren Palmer
- Pb: Daniel Garver
- NO<sub>2</sub>: Ryan Brown
- O<sub>3</sub>: Daniel Garver
- PM<sub>2.5</sub>: Darren Palmer
- PM<sub>10</sub>: Stacy Harder
- SO<sub>2</sub>: Stacy Harder
- Air Toxics: Donnette Sturdivant